Information Technology Strategy for Da Afghanistan Bank

Economic Growth and Governance Initiative

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Executive Summary

Introduction

Da Afghanistan Bank continues to experience rapid growth and consolidation of its core operations becoming a more complex organization with more changes to come in the next few years. Information and Communications Technologies (ICTs) will continue to have a key role to play in contributing to the implementation of rapid changes at DAB that will allow the bank to implement the overall strategy and also will enable the particular objectives as set in the DAB Strategic Plan for the Strategic Pillar 3 – Enhance Information Management.

This ICT strategy has been produced as a result of an evaluation of the current DAB strategic plan, a revision of the previous Information Technology strategy documented and revised in 2003 and an evaluation of the new challenges that ICT at DAB needs to address in the short and midterm.

Management is encouraged to share this strategy document with the major operational areas at DAB to encourage ownership of the objectives and strategic actions identified.

The IT General Directorate at DAB, in the past few years, has concentrated efforts in the deployment and support of web based systems to service the most critical areas within the organization as well as support to the networked environments, desktop and laptop deployment, shared resources and printing services with the implementation of a well-staffed help desk.

Good progress has been achieved and the organization has to enter into a different maturity level that should include consolidation of operations, support to new IT initiatives and the deployment of technologies that should secure the information assets being accumulated at the different departments at DAB.

The strengthening of organization and the deployment of new technologies and systems to support and secure the information is the backbone of the ICT strategy that should allow us to grow and protect the progress we have already made, to establish best practice in terms of our processes and governance controls and to achieve a solid foundation through our infrastructure architecture, and work processes which will continue to support robust ICT throughout the DAB.

Mission

The IT Directorate's primary function is to provide technological support to DAB in its day-to-day activities and has defined its mission to be, **to provide appropriate Information and Communication technologies that enable our users, external and internal, to access the information and services necessary to properly complete their duties.**

This mission should be considered as the "consolidation mission", i.e., the mission that the IT Directorate will have in the mid-term when the consolidation of current services and infrastructure should occur along with the introduction of other required services. In the longer term, the mission of the IT Directorate should evolve to develop further skills and abilities to become an enabler of higher business productivity by the introduction of emerging technologies.

Vision

As described in above, the IT Directorate is in the process of consolidation and with a vision to become a business enable at DAB. The vision or what the ICT Directorate would like to become can be described by:

The ICT Directorate at DAB will add significant value to DAB through the strategic use of our people, our skills and capabilities to deliver quality services in a technology environment that implements Confidentiality, Integrity and Availability.

Challenges

The following challenges have been identified for the IT General Directorate:

1. **Infrastructure**. The current infrastructure at the Data Center even when fairly well administered and maintained needs to be revamped in some areas that include: access security and recovery (backups and disaster recovery).

2. **Security**. With the increase of transactions and the exposure of systems to external users, DAB needs to formalize a security implementation and monitoring function.

3. **Connectivity**. Current connectivity between headquarters and branches is unstable and slow in most of the cases.

4. **Organization.** The IT Directorate is understaffed particularly in the domain of application development and database support.

5. **Increased Demand**. Increased demand of Information Technology Services across the Organization.

6. **External Audit Suggestions**. Several issues as noted in the external audit report are still pending of resolution.

7. **Governance – Policies and Procedures**. Documentation in general needs either to be produced or updated. This should include current procedures and policies.

Strategic Objectives

To address these challenges, the IT General Directorate is adopting four strategic objectives which will be achieved through a combination of people, process and technology and decisive support from DAB's upper management:

1. Provide a secure IT infrastructure which delivers appropriate levels of data Confidentiality, Integrity and Availability. This objective should address the infrastructure challenges, security concerns and practically all observations in the audit report. (6, 1, 2, 3)

2. Ensure the implementation of a sound IT organization with appropriately skilled resources. (4)

3. Support the implementation of externally sponsored IT projects for different areas promoting Project Management functions. This support should address the need for new information systems at DAB and related to the increased demand of IT solutions. (5)

4. Incorporating effective Governance to promote a close alignment between IT and Dab Departments. (7)

Strategic Actions

Aligned with the strategic objectives detailed above, the main actions include:

Infrastructure – Security

- The strengthening of the current infrastructure in terms of recovery, security, and data center physical security;
- The definition and implementation of a Disaster Recovery strategy;

Organization

- The strengthening of the IT organization at the bank by reviewing, designing and implementing and populating an organization that addresses the current and future DAB needs;

Increased Demand

- The support to World Bank funded automation projects.

Effective Governance

- The review and definition of IT policies to align business objectives with IT support.

Organization and Services

Current Organization Structure

The Information Technology Directorate at DAB comprises 20 staff, assigned as shown in the organization chart below,
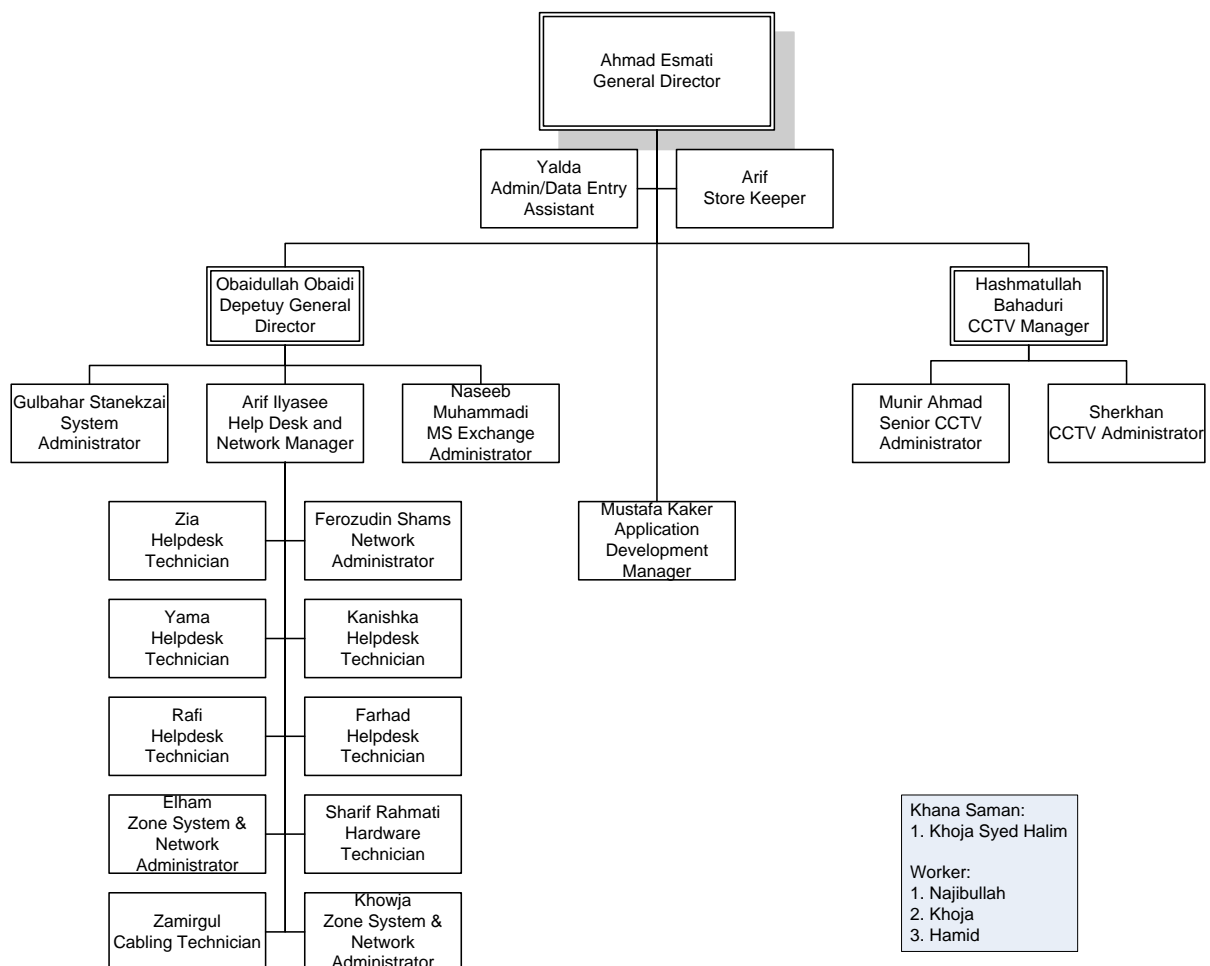
Figure 1 - IT Directorate Organizational Structure

Service Portfolio

Workplace Support Services

The IT Directorate provides the following key services for DAB:

- Workstation management: Provision and management of PCs, user access and ID management;
- Communications and Collaboration: Phones, email, etc;
- File and Print: Managed File & Print services;
- Personal productivity: Word, Excel, PowerPoint, Internet access.

Business Applications

Some business applications are supported by the IT Directorate but in general support to applications is provided by sub-contractors that include: Virmati and Netlinks (AFX)

Business Applications deployed include:

Department	Application
Chief Financial Office	Core Banking System (CBS) – Support provided by Virmati
	Expense Control, Banking Operations, Market Operations, Reconciliation, Accounts Payable, Fixed Assets, Payroll, FX module
Bank Operations	ACSS – AFTS - Support provided by IT Directorate
	SWIFT – External contracted systems
Market Operations	Bloomberg - AFX – External contracted systems

Infrastructure Services

Services that are not visible to the users but are necessary to maintain the infrastructure running, they include:

- Local Area Networks
- Wide Area Network
- Server hosting & management
- IT security, including
    - Firewall management
    - Anti-virus
    - Backup/ restore (Only for CBS)
- Closed Circuit TV surveillance support systems.

Help Desk

The following are the statistics for the number of cases solved by IT Directorate's during the calendar year for 2009 help desk teams.

Total number of cases solved: 2694

Category	Number of Cases
Hardware	461
Network	766
Software	1467

Statistical Report from 2010-01-01 to 2010-06-31

Total number of cases solved: 1344

Category	Number of Cases
Hardware	370
Network	340
Software	634

Current Technology

This section provides a high level description of the current infrastructure deployed at the Da Afghanistan Bank and the configuration of a typical branch and regional office.

Desktop Environment

As defined in the 2003 strategic plan, DAB has deployed over 100 computers in the central location and the branches across the country. The basic configuration deployed includes Windows XP computers with Microsoft Office as the office automation tool. Most of the computers use Outlook express as the email client. Automatic patching of the operation system is deploying via the network as well as updates to the anti-virus software.

Currently DAB has about 1000 desktops and laptops and the number is growing. By March 2011, IT Directorate plans to equip each and every employee of DAB with a workstation.

Data Center / LAN / WAN

The current Data Center / LAN / WAN infrastructure is described in the diagram below.
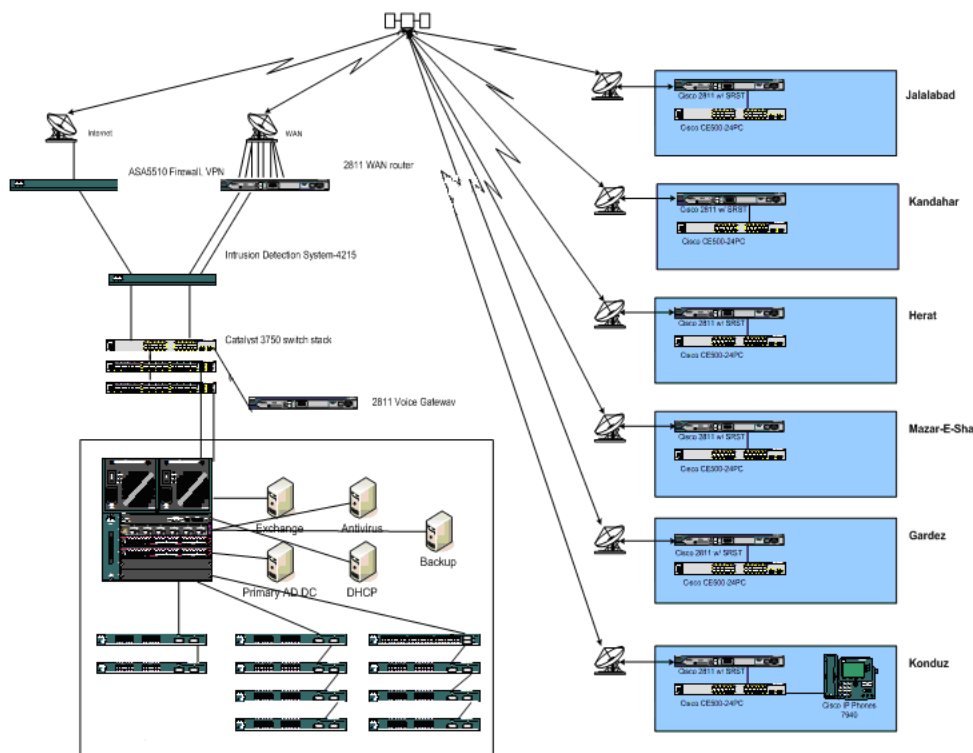
Figure 2 - Data Center / LAN / WAN

Recovery/Backup Services

Recovery

Currently there are no documented recovery strategies in place. At the moment applications running at the Data Center are supported individually and some of them may have some level of redundancy. For example, every rack is supported by its own Uninterruptable Power Supply (UPS) unit since the central system and its redundant unit is currently damaged and waiting for repairs to be completed.

A similar situation can be found with the Backup Server, where only one of the units is operational at the moment of the preparation of this report. The Core Banking System has its own back up service.

The individual documentation of the infrastructure of the systems to be completed in the near future will provide a better view of the recovery capability of every single system in operation at the Data Center.

Backup

The central backup system is supported by Symantec Backup Services in terms of software and supported by two digital tape units.

Backups are performed on a daily, weekly and monthly basis and the tapes are being stored out of the central bank premises.

A diagram of the Backup Server Rack is presented in the next figure:

Backup Server Rack

Patch Panel 1

Backup Server

Tape Unit 1
Tape Unit 2

Update Services Server

Intranet Services

Power Supply
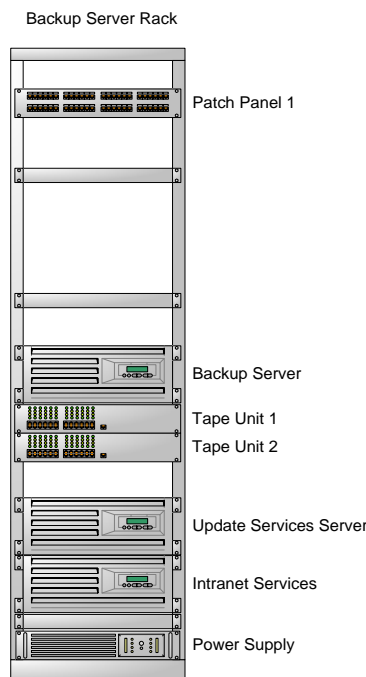
Figure 3 - Current Backup Server Rack

Voice

Voice over Internet Protocol (VoIP) and IP telephony have been introduced to replace the more traditional PBX/ leased line technology. This has resulted in voice servers deployed in the regional branches, providing voice services to remote users as well as HQ users over the WAN. The deployed technology includes:

- Cisco CallManager cluster
- Cisco Unity Voicemail
- CiscoUnity IP Media Gateways
- Cisco switches and WAN routers.

On-line systems

The IT Directorate supports a number of important on-line transactional systems supporting the business processes of the Bank Operations and Market Operations. The online systems available to external users include the Afghanistan CSS (ACSS) and the Afghanistan Fund Transfer System (AFTS). Another on-line system to support the clearing house functions (ACH) is being deployed at the moment of preparation of this report.. Technologies used to support these systems include IIS, J2EE, PHP and mySQL.

Core Banking System (CBS)

As defined by the strategic plan of 2003 a Core Banking System has been procured and deployed. This is a very notable achievement of DAB. DAB is consolidating the different CBS databases in order to have a centralized system that should be able to facilitate the production of consolidated reporting among other advantages.

The CBS system covers the following functionality:

- General Ledger
- Money Market Operation
- Bank Branches Operations
- Accounts Payables / Receivables
- Payroll

The following diagram depicts the different technology component that encompasses the current deployment of the CBS system.

Virmati Software & Telecommunication Limited
Da Afghanistan Bank Datacenter - And Network Architecture
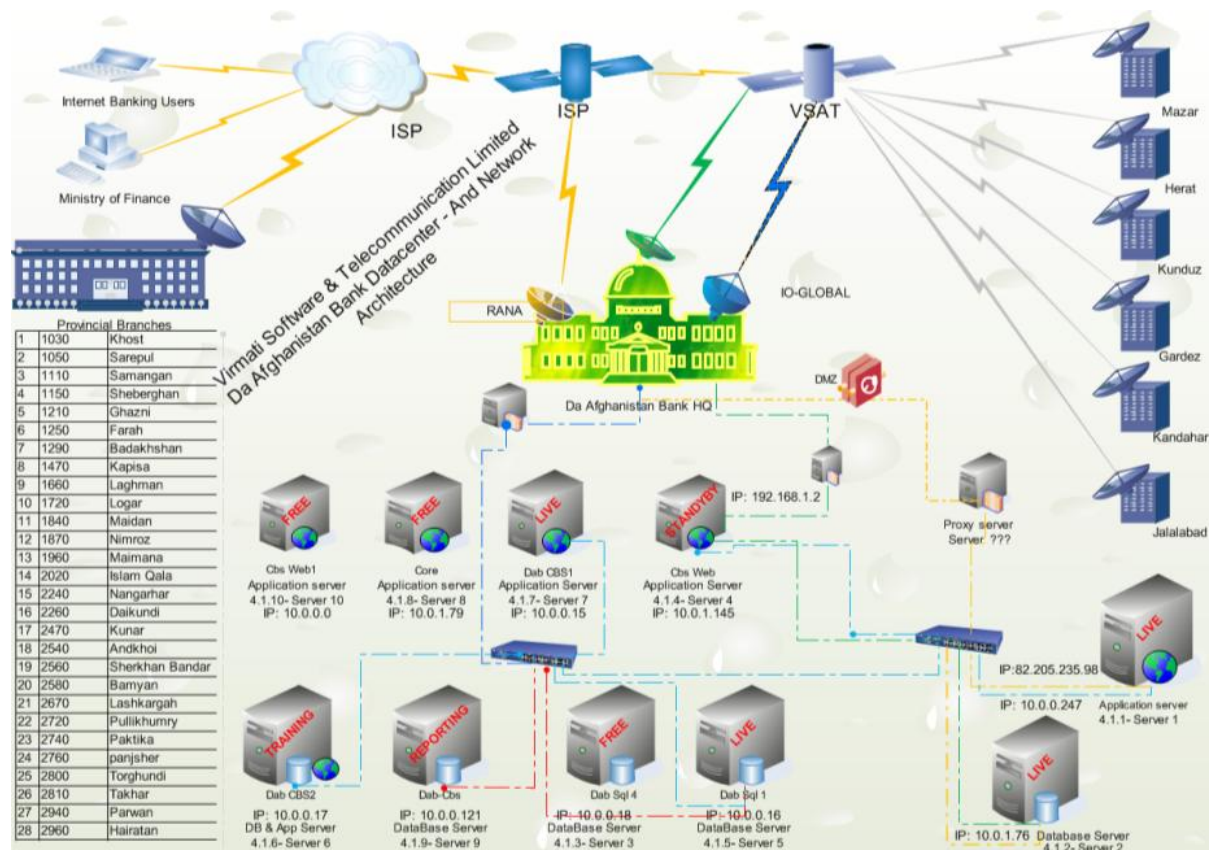
eMail Services

Every branch is provided with one email account and the zones are provided with at least 2 email accounts.

Location	Current[1] email Accounts	Mailbox size	Operating System	MS Office Version
Central	100	Hosted	Windows XP / Vista	2003 / 2007
7 Zones	14	Hosted	Windows XP / Vista	2003 / 2007
40 Branches	40	Hosted	Windows XP / Vista	2003 / 2007
Total	154			

The company providing the services is NetLinks Solutions based in Afghanistan whose servers are physically located in the United States.

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[1] This is an estimated number.

Overall DAB Strategy

Mission – Vision

As defined in the Strategic Plan – Da Afghanistan Bank 2009 – 2014, the Mission for the DAB is:

The mission of DAB is to foster price stability

and build a robust, stable, modern and sound financial system.

The vision at DAB was defined as:

The vision of DAB is that of a monetary

institution which upholds international

best practice in fostering price stability

and a sound financial system conducive

to practicing what to macro-economic stability, and

broad- based economic growth.

Strategic Pillar 4: Effectiveness of Information Management

The overall DAB strategic plan describes how DAB will achieve its mission of fostering price stability and building a robust financial system over the next five years (2009-2014). It outlines five strategic pillars, namely improving the conduct of monetary policy, deepening the financial intermediation, accelerating capacity building, enhancing effective information management, and ensuring good corporate.

Pillar 4 is specifically related to the IT Directorate functional scope.

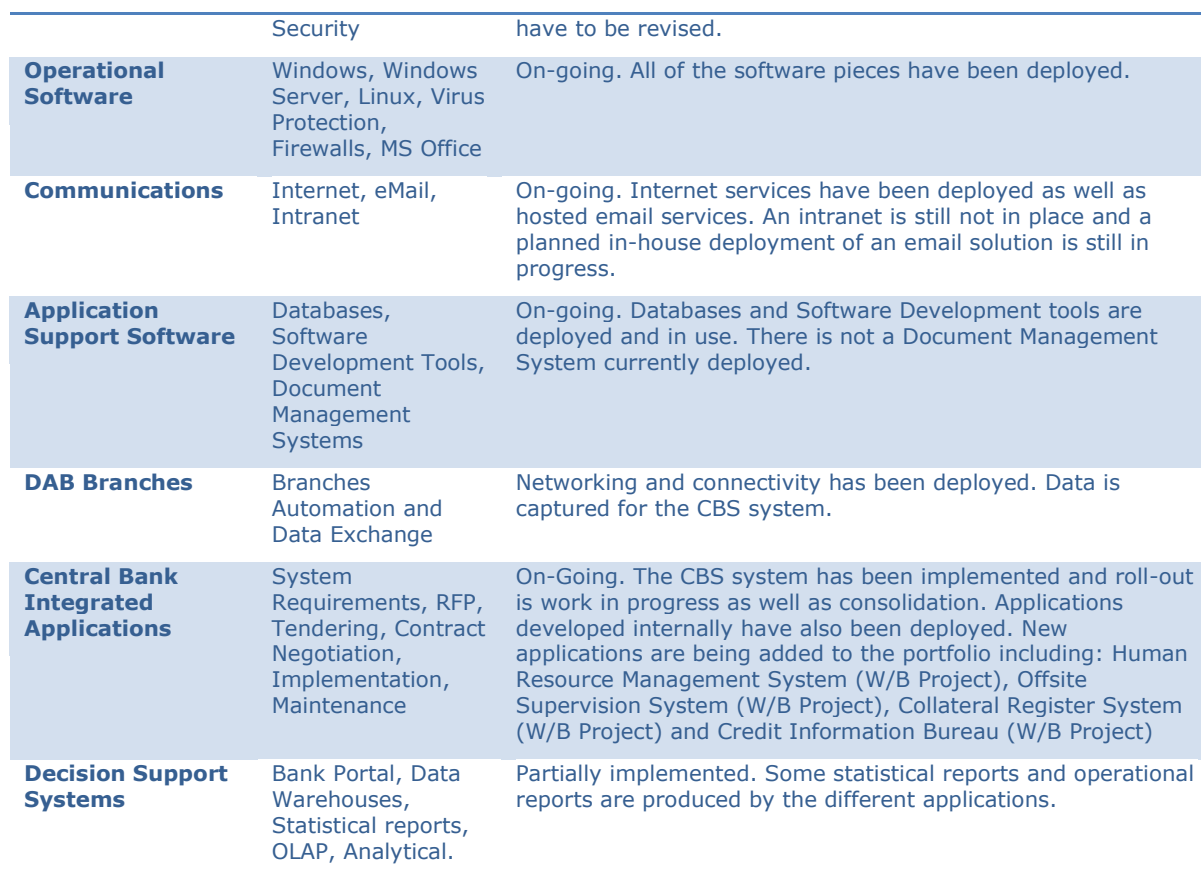| Activity	Performance Measure	Progress
Automate all core and other important business functions of the Bank.	ICT application architecture Appropriate administrative structures and ensure effective project management for the acquisition and eventual deployment of systems. Automated systems aligned to business objectives and conforming to the application architecture Trained staff Rationalized business processes	CBS has been implemented ACSS and AFTS have been linked to the CBS system Check Clearance has been developed by the IT Department The IT Consultancy Firm that will support the implementation of the WB funded systems has been selected and should start activities in the near future.
Make the DAB computing network	Deployed LAN and WAN conforming to DAB network Number of professional staff	LAN has been implemented in the Head Office and all the branches. All branches are interconnected via a VSAT WAN network.

accessible to all employees.	with easy accessibility to personal computers	The implementation of the Fiber Optic Network has already been started.
		With the exception of tellers and chief teller, everyone else has been provided with computer equipment.
Adopt industry best practice to operate, administer and maintain DAB computing facilities	Existence of ICT operations plans practices and procedures Existence of Appropriate diagnostics and operation management systems Annual and quarterly management reports	A fully functional Help Desk is administrating and maintaining DAB computing equipment.
Adopt industry best practice to operate, administer and maintain DAB computing facilities	Issuance and adherence to information and security policies, plans and procedures. Issuance of regulations on computer usage Appropriately equipped and updated Disaster recovery Site. Quarterly and Annual Management reports	Funding for the Disaster Recovery strategy implementation has been secured Two countries have been surveyed and after completing the survey of a third country, a site will be selected.
Define the information needs of each executive office and department	Up-to-date documentation of information needs per department Including specification of content, frequency and format	In year 2010 a survey was completed all around the country. Requirements were defined and approved by the zone heads. The needs requirements has been presented and approved by the Executive Board and procurement is in progress at the General Services Department.

The strategic objectives of this ICT Strategic Plan will be aligned to the Activities identified under pillar 4 in particular and aligned to the overall DAB strategic objectives, vision and mission.

2003 Strategy - Progress

The 2003 Information Technology Strategy for DAB defined 10 basic components to be addressed in a period of two years. The following table summarizes the progress against those goals and objectives.

Activity	Tasks	Progress
Facility, IT Inventory	Building Plan, Offices Plan	Completed. IT basic facilities have been deployed and an inventory of assets is maintained by the IT Directorate.
Staff	DAB IT Department, staffing, training	Completed and on-going. IT Directorate is created and staffed. There is still a revision to be conducted and an evaluation of required resources still needs to be an on-going activity
Networking	LAN, WAN, Branches	On-going. Network has been deployed in HQ and branches as well as a functioning WAN. WAN is being upgraded to be supported by the government OFC initiative.
Hardware	PC, Servers, Printers, Scanners, Generators/UPS, Back Up, Physical	On-going. Equipment has been deployed across the organization. A back up strategy is in place and physical security. These two last items are an on-going effort that will

	Security	have to be revised.
Operational Software	Windows, Windows Server, Linux, Virus Protection, Firewalls, MS Office	On-going. All of the software pieces have been deployed.
Communications	Internet, eMail, Intranet	On-going. Internet services have been deployed as well as hosted email services. An intranet is still not in place and a planned in-house deployment of an email solution is still in progress.
Application Support Software	Databases, Software Development Tools, Document Management Systems	On-going. Databases and Software Development tools are deployed and in use. There is not a Document Management System currently deployed.
DAB Branches	Branches Automation and Data Exchange	Networking and connectivity has been deployed. Data is captured for the CBS system.
Central Bank Integrated Applications	System Requirements, RFP, Tendering, Contract Negotiation, Implementation, Maintenance	On-Going. The CBS system has been implemented and roll-out is work in progress as well as consolidation. Applications developed internally have also been deployed. New applications are being added to the portfolio including: Human Resource Management System (W/B Project), Offsite Supervision System (W/B Project), Collateral Register System (W/B Project) and Credit Information Bureau (W/B Project)
Decision Support Systems	Bank Portal, Data Warehouses, Statistical reports, OLAP, Analytical.	Partially implemented. Some statistical reports and operational reports are produced by the different applications.

Mission

The IT Directorate has defined its vision as follows:

> **To provide appropriate Information and Communication technologies that enable our clients, external and internal, to access the information and services necessary to properly complete their duties.**

This mission should be considered as the "consolidation vision", this is, the vision that the IT Directorate will have in the mid-term when the consolidation of current services and infrastructure should occur along with the introduction of other required services. In the longer term, the mission of the IT Directorate should evolve to develop further skills and abilities to become an enabler of higher business productivity by the introduction of emerging technologies.

Vision

The vision or what the ICT Directorate would like to become can be described by:

> **The ICT Directorate at DAB will add significant value to DAB through the strategic use of our people, our skills and capabilities to deliver quality services in a technology environment that implements Confidentiality, Integrity and Availability.**

Strategic Objectives

Provide a Secure IT Infrastructure

Working Definition

The primary role for any IT function is to provide a secure ICT infrastructure that supports the business in its day-to-day activities.

A secure ICT infrastructure is defined as one that delivers levels of Confidentiality, Integrity and Availability that are appropriate to the value the business puts on its data.

Confidentiality ensures that the data remains private, with access limited to those who are authorized to view or use it. Integrity refers to the trustworthiness of data; Availability refers to the timely and reliable access to data and systems for authorized users.

Objectives

Provide a secure infrastructure for current and future systems deployments and day-to-day operations.

Activities

Activity	Performance Measure	Start Date	End Date
Revise Current Backup Policy	Backup Policy documented and implemented that includes all systems and data on Client computers	Sep 2010	Nov 2010
Security Evaluation	An independent network security vulnerability assessment completed.	Jan 2011	Aug 2011
Increased Physical Security for Data Center	Implement automated access controls to the data center.	Sep 2010	Nov 2010
Complete the documentation of the Disaster Recovery Strategy	Disaster Recovery Strategy documented and presented to upper management.	Sep 2010	Oct 2010
Complete the selection of an off-shore DR site	Site selected and negotiations completed.	Oct 2010	Nov 2010
Domain Controller Security Review	All issues identified in the audit report under the Domain Controller section resolved.	Sep 2010	Nov 2010
OFC Wide Area Network	Implementation of a wide-area-network connecting the central offices with the branches based on the Optical Fiber infrastructure.	Sep 2010	Dec 2010
Procure, Install and Deploy a new eMail System	Procurement and implementation of a new eMail system. Lotus Notes has been determined as the new in-house email system to be installed. Efforts to procure the licensing and implementation services will be carried out.	Sep 2010	Mar 2010

Strengthening of the IT Organization

Working Definition

As noted above in the Organization section of this document, DAB needs to strengthen its IT supporting organization. In general the IT organization has been focused on the infrastructure component and is weak in the software development and database support functions as well as the IT security functions. This strategic objective identifies specific actions to address these issues and provide a more mature ICT supporting organization.

Objectives

Strengthen the ICT organization by re-defining the current IT organization and by populating those areas identified as requiring more qualified personnel.

Activities

Activity	Performance Measure	Start Date	End Date
Revise and propose a new IT organization for the DAB	Complete an evaluation of the current IT organization Define and document the main components of the new IT organization Recruitment of skilled personnel to support the new IT organization	Jan 2011	Apr 2011
Incorporate a Formal IT Security Function	New function defined and implemented	Jan 2011	Apr 2011

Support the Implementation of New Systems

Working Definition

With World Bank funding, DAB is in the process of implementing new computer systems to support different operational areas at DAB. The support in the procurement and implementation of various systems is one of the objectives of the Afghanistan: Financial Sector Strengthening Project (IDA Grant H 484).

The IT Directorate should provide support and be involved as part of the implementation project. Resources may be required to work in conjunction with the selected firms that will provide implementation services.

Objectives

Support the implementation efforts of the computer systems to be delivered under the World Bank initiative.

Activities

Activity	Performance Measure	Start Date	End Date
Supply and Installation of Enterprise Resource Platform for automation of supervision department of DAB	ICT to support efforts where required	TBD	TBD
Supply and Installation of Enterprise Resource Platform for automation of Human Resource Management database at DAB	ICT to support efforts where required	TBD	TBD
Supply and Installation of IT system for Credit Information Bureau	ICT to support efforts where required	TBD	TBD
Supply and Installation of IT systems for Collateral Registry of DAB	ICT to support efforts where required	TBD	TBD

Governance, Policies and Procedures

Working Definition

The ICT Directorate will maximize the usage of valuable technology resources only with the implementation of Governance processes, ICT policies across the organization and documented sound procedures to support operations.

Activities

Activity	Performance Measure	Start Date	End Date
Inventory and Review all ICT Policies and Procedures available	Completed list of policies	July 2011	Dec 2011
Review and define IT policies and procedures for those gap areas identified	New policies defined	July 2011	Dec 2011
Review and address specific external audit items	Changes implemented	Jan 2011	Dec 2011